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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,178	11/25/2003	Shiu C. Ho	BUR920030146US1	1177
30449	7590	04/05/2005	EXAMINER	
SCHMEISER, OLSEN + WATTS			LUU, AN T	
3 LEAR JET LANE			ART UNIT	
SUITE 201			PAPER NUMBER	
LATHAM, NY 12110			2816	

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

**Office Action Summary**

Application No.

10/707,178

Applicant(s)

HO, SHIU C.

Examiner

An T. Luu

Art Unit

2816

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on Amendment filed on 3-15-05.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-9 and 14-19 is/are allowed.
- 6) ☐ Claim(s) 1-3, 10-13 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

Applicant's Amendment filed on 3-15-05 has been received and entered in the case. The rejections set forth in the previous Office Action are withdrawn and new grounds of rejection is presented due to amendment of claims.

#### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-3, 10-13 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the limitation "*a second input of the second latch circuit*" does not have a clear antecedent basis since there is no "*a second input of the second latch circuit*" recited earlier.

Regarding claim 11, it is rejected for the same reason set forth above.

Regarding claims 2-3, 10, 12, 13 and 20, they are rejected for being dependent on the rejected claims as noted above.

#### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 2816

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Pauls reference (US Patent 6,285,219) in view of the Wong et al reference (US Patent 6,621,320).

Pauls discloses in figure 3 a phase locked loop comprising a voltage controlled oscillator 314 adapted to provide a first clock signal VCOCLK comprising a first frequency; and a phase frequency detector 301 adapted to compare the first clock signal comprising the first frequency to a reference clock signal REFCLK comprising a reference frequency, the phase frequency detector comprising a first latch circuit 302 a second latch circuit 304 and a circuit 310 adapted to vary a minimum pulse width of an increment pulse and a minimum pulse width of a decrement pulse, the circuit being directly connected to a first input of the first latch circuit and a first input of the second latch circuit as partially required by claim 1. It is noted that the limitation "*the circuit being further adapted to reduce a static phase error of the phase locked-loop circuit*" is seen as intended use of the circuit.

The (delay) circuit 310 of Pauls is not shown as programmable circuit as specifically required by the claim.

Wong et al discloses in figure 5 a programmable delay circuit including a decoder 510 for enabling delay element(s) (i.e., enabling and/or disabling the delay line) as required by the claim.

It would have been obvious to one skilled in the art at the time the invention was made to incorporate the teachings of Wong et al into that of Pauls since Pauls discloses in col.6, lines 21-22, that his delay circuit 310 is optional. In other words, the delay circuit 310 can be part of the circuit (i.e., enable mode as seen in Wong et al) or it can be omitted from the circuit (i.e., disable mode as seen in Wong et al).

Art Unit: 2816

A skilled artisan in the art would be motivated to utilize the programmable delay circuit taught by Wong et al into the teachings of Pauls since Wong's circuit is independent from temperature variation.

Regarding claim 11, it is rejected for reciting method/steps derived from the apparatus of claim 1 which is rejected as noted above.

5. Claims 1-3, 11-13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Pauls reference (US Patent 6,285,219) in view of the Jeong et al reference (US Patent 6,144,242).

Pauls discloses in figure 3 a phase locked loop comprising a voltage controlled oscillator 314 adapted to provide a first clock signal VCOCLK comprising a first frequency; and a phase frequency detector 301 adapted to compare the first clock signal comprising the first frequency to a reference clock signal REFCLK comprising a reference frequency, the phase frequency detector comprising a first latch circuit 302 a second latch circuit 304 and a circuit 310 adapted to vary a minimum pulse width of an increment pulse and a minimum pulse width of a decrement pulse, the circuit being directly connected to a first input of the first latch circuit and a first input of the second latch circuit as partially required by claim 1. It is noted that the limitation "*the circuit being further adapted to reduce a static phase error of the phase locked-loop circuit*" is seen as intended use of the circuit.

The (delay) circuit 310 of Pauls is not shown as programmable circuit as specifically required by the claim.

Art Unit: 2816

Jeong discloses in figure 4C a programmable delay circuit being control by a control signal as required by claim 1.

It would have been obvious to one skilled in the art at the time the invention was made to replace a delay circuit in Pauls with the one taught by Jeong since Pauls teaches in col. 5, lines 12-17 and col. 9, lines 7-14, that modification of components in his circuit may be practiced without some or all of specific details.

A skilled artisan in the art would have selected the programmable circuit taught by Jeong to incorporate into the teachings of Pauls since Jeong's programmable delay circuit would provide a digital control over a wider range of pulse widths.

As to claims 2 and 3, Jeong discloses in figure 4C a programmable circuit comprises a multiplexer 440 and a plurality of buffers 442, wherein the plurality of buffers is divided into a plurality of groups, wherein each of the plurality of groups comprises a different number of buffers, wherein each of the plurality of groups is electrically connected to the multiplexer, and wherein the multiplexer is adapted to switch between signals (i.e., by means of "control") from each of the plurality of groups to vary the minimum pulse width of the increment pulse and the minimum pulse width of the decrement pulse as required by the claims.

As to claims 12-13, they are rejected for reciting method/steps derived from the apparatus of claims 2-3 which is rejected as noted above.

As to claims 10 and 20, Pauls does not disclose an operable frequency range of the reference frequency as required by claims. However, it would have been obvious to one skilled in the art to determine an operational range and/or optimum range since it has been held that

Art Unit: 2816

where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Allowable Subject Matter***

7. Claims 4-9 and 14-19 are allowed.

8. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to disclose a programmable circuit and method thereof being configured as recited in claims 4 and 14. Specifically, none of the prior art teaches or fairly suggests a structure of an operational amplifier, first and second capacitor and a delay line as recited in claims.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after



Art Unit: 2816


the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

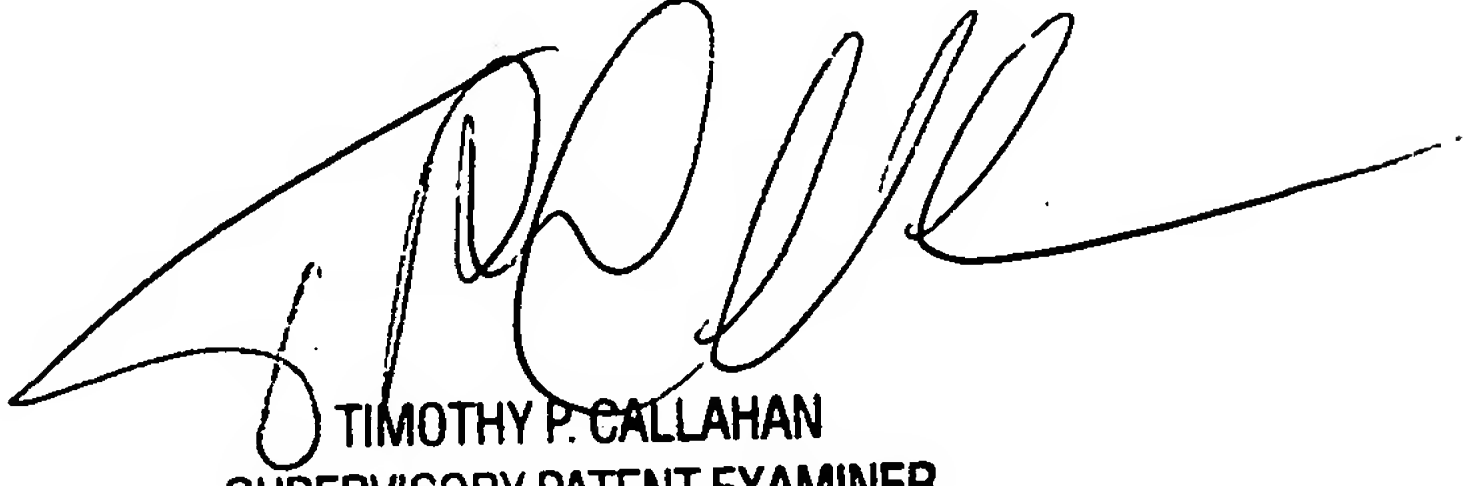
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to An T. Luu whose telephone number is 571-272-1746. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

An T. Luu

3-21-05 

  
TIMOTHY P. CALLAHAN  
SUPERVISORY PATENT EXAMINER  
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